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Diabetes Life Lines

How Diabetes Affects Your Kidneys

The kidneys are a system that filters blood and removes waste from the body. Small particles squeeze through the filter and are removed as waste in urine, while useful protein and red blood cells are kept in the body.

Unfortunately, high blood sugar levels can damage this filter causing protein to leak out. Over time, the kidneys can completely lose their filtering ability, and waste builds up in the blood. Eventually, the kidneys fail. This is called end stage renal disease (ESRD).

ESRD is very serious and requires a kidney transplant or routine dialysis treatments, in which a machine filters blood for the body. Dialysis treatments last about four hours and are needed about three times a week. Patients also have to follow a strict diet during treatment, which makes watching carbohydrate intake even more difficult.

Kidney disease typically causes no symptoms until almost all function is gone. So, it is critical to see your doctor regularly. They can check your urine for protein, blood for waste products, blood pressure, and other diabetes complications.

Not everyone with diabetes gets kidney disease. Your family history, blood sugar control, and blood pressure affect your chances of getting kidney disease. Even a small rise in blood pressure can make kidney disease worsen quickly. So, it is important to meet your doctor’s goals for your blood sugar levels and blood pressure to lower your risk of kidney disease.

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Keep blood sugar levels in range by following your diabetes diet plan. This usually means eating a similar amount of carbohydrates at each meal.

Improve blood pressure by avoiding tobacco, getting regular exercise, losing weight, and eating less salt.

Also, follow the DASH (Dietary Approaches to Stop Hypertension) diet. The DASH diet is a healthy diet rich in fruits, vegetables, whole grains, and low fat dairy products. The DASH diet is also low in saturated fat and cholesterol. Following the DASH diet can help lower risk of heart disease too, so take care of your body by eating smart!

Sugars are naturally occurring carbohydrates. Some examples are cane sugar, brown sugar, fructose, and honey. All sugars have calories and raise blood sugar levels. Low calorie sweeteners, like sugar alcohols, have half the calories of sugars but still raise blood sugar. Artificial sweeteners, on the other hand, do not contain carbohydrate, so they are much less likely to raise your blood sugar.

Because most artificial sweeteners can’t be broken down by the body, they provide no calories. If used in place of sugar, these sweeteners may help with weight loss. Most sugar substitutes are at least 100 times sweeter than regular sugar, so only a small amount is needed.

Six artificial sweeteners have been approved by the U.S. Food and Drug Administration (FDA). These sweeteners are used to make products such as diet soda, chewing gum, and desserts. They can also be added to foods and drinks at home such as yogurt, coffee, and tea.

- Acesulfame potassium (acesulfame K; Sunett®; Sweet One®)
- Aspartame (Nutrasweet®; Equal®)
- Saccharin (Sweet N’ Low®)
- Sucralose (Splenda®)
- Neotame
- Advantame

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**Sweeten Up Your Life with Artificial Sweeteners**

We all like something sweet once and a while, but blood sugar control is key to managing your diabetes. Using low and no calorie or artificial sweeteners in place of sugar may help you satisfy your cravings for sweets and manage your blood sugar.
Stevia is a natural artificial sweetener that comes from the stevia plant. Stevia is several hundred times sweeter than sugar. Brand names include Truvia® and A Sweet Leaf®. Like other artificial sweeteners, Stevia has no calories or carbohydrate. Studies have even shown that using Stevia can lower fasting blood glucose and triglyceride levels in humans with diabetes.

A 12 ounce can of non diet soda or a medium sweet tea from a fast food restaurant has about 40 grams of carbohydrate and most of this is sugar. Instead of getting a regular soda, get diet soda, which contains artificial sweetener and no carbohydrate or sugar. If you like sweet tea, get the unsweetened option and add Stevia® or Splenda® to sweeten.

The FDA recognizes artificial sweeteners as safe. Still, some people believe that artificial sweeteners are bad. One study in mice made headlines recently. This study showed that artificial sweeteners may change the bacteria living in your intestines, which could be bad for blood sugar. However, the amount of sweetener eaten daily was large. The study was also done on mice, which are hard to compare to humans.

More evidence supports that artificial sweeteners are safe than not. Therefore, you can feel safe using them to sweeten your coffee or in place of sugar when baking. However, as always, keep in mind that moderation is key.

References:
1. Nutritional composition of Stevia rebaudiana, a sweet herb, and its hypoglycaemic and hypolipidaemic effect on patients with non-insulin dependent diabetes mellitus, Ritu and Nandini, Journal of the Science of Food and Agriculture 2014
2. Artificial sweeteners induce glucose intolerance by altering the gut microbiota, Suez et al, Nature 2014

Spotlight on New Diabetes Treatments

By Lauren Coheley, RDN, LD, CDE

It is hard to turn on the television or open a magazine and not see an advertisement for the newest, greatest, medication to treat your diabetes. It can be quite confusing to determine whether: a.) The advertisement is presenting accurate information and b.) Whether the medication is right for you to use. So what do you really need to know about these medications?

Continued on next page
Diabetes medications work in different ways. Some diabetes medications help the pancreas release more insulin, others help our cells use insulin better, while others prevent the liver from releasing too much glucose in the blood. Below is a table of the newest diabetes medications, what they do, benefits of use, and possible side effects. This will help you talk to your doctor and make informed decisions about what medication is right for YOU!

<table>
<thead>
<tr>
<th>Class</th>
<th>Brand Name (Generic Name)</th>
<th>What does it do?</th>
<th>What are the benefits?</th>
<th>Possible Side-Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGLT2 Inhibitors*</td>
<td>Farxiga® (Dapagliflozin)</td>
<td>Lowers blood glucose by helping the kidneys to remove glucose from the body through urine.</td>
<td>Mild reduction in blood pressure</td>
<td>Yeast infections</td>
</tr>
<tr>
<td></td>
<td>Invokana® (Canagliflozin)</td>
<td></td>
<td>Low risk for hypoglycemia (low blood sugar)</td>
<td>Urinary tract infection</td>
</tr>
<tr>
<td></td>
<td>Jardiance® (Empagliflozin)</td>
<td></td>
<td>Modest weight loss</td>
<td>Increased urination</td>
</tr>
<tr>
<td>DPP-4 Inhibitors</td>
<td>NESINA® (Alogliptin)</td>
<td>Helps your pancreas to make more insulin</td>
<td>Low risk for weight gain or loss</td>
<td>Upper respiratory tract infection</td>
</tr>
<tr>
<td></td>
<td>Tradjenta® (Linagliptin)</td>
<td>Lowers the amount of glucose made by your liver</td>
<td>Low risk for hypoglycemia</td>
<td>Stuffy or running nose</td>
</tr>
<tr>
<td></td>
<td>Onglyza® (Saxagliptin)</td>
<td></td>
<td></td>
<td>Sore throat</td>
</tr>
<tr>
<td></td>
<td>Januvia® (Sitagliptin)</td>
<td></td>
<td></td>
<td>Headache</td>
</tr>
<tr>
<td>GLP-1 Receptor Agonists</td>
<td>Tanzeum® (Albiglutide)</td>
<td>Helps your pancreas make more insulin</td>
<td>May make you feel less hungry and more full</td>
<td>Diarrhea</td>
</tr>
<tr>
<td></td>
<td>Trulicity® (Dulaglutide)</td>
<td>Lowers the amount of glucose made by your liver</td>
<td>Low risk for hypoglycemia</td>
<td>Nausea</td>
</tr>
<tr>
<td></td>
<td>Byetta® (Exenatide)</td>
<td></td>
<td></td>
<td>Vomiting</td>
</tr>
<tr>
<td></td>
<td>Bydureon® (Exenatide extended release)</td>
<td>Help slow down the breakdown of your food</td>
<td>Low risk for hypoglycemia</td>
<td>Headache</td>
</tr>
<tr>
<td></td>
<td>Victoza® (Liraglutide)</td>
<td></td>
<td>Modest weight loss</td>
<td>Indigestion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Increased risk for pancreatitis</td>
</tr>
</tbody>
</table>

*These medicines have not been shown to be safe or effective for type 1 diabetes*
Fruity Granita
(from Kraftfoods.com)

Granita is a semi-frozen desert of sugar, water, and different flavors originating in Sicily and popular in Italy. This one uses Crystal Light Lemonade™ which is made with artificial sweeteners to reduce the amount of sugar needed to make the dessert. Enjoy it immediately, or freeze and serve later. Very refreshing on these hot summer days!

Ingredients:

1 ¼ cup water
1 pitcher sized packet of Crystal Light Lemonade™
1-20 ounce bag frozen strawberries

Directions:

1. Combine half the packet of lemonade mix with half the fruit in the blender. Cover and blend until smooth. Stir with spatula if needed.
2. Repeat with remaining fruit and liquid.
3. Pour into five cups.

Can eat immediately or freeze and eat later.

Makes 5 servings

Nutrition Information: Calories: 40, Carbohydrate: 10 g, Sugar: 5 g, Fiber: 2 g, Fat: 0 g, Protein: 0.5 g, Sodium: 4 mg, Cholesterol: 0 mg

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Dear Friend,

*Diabetes Life Lines* is a bi-monthly publication sent to you by your local county Extension agent. It is written by an Extension Nutrition and Health Specialist and other health professionals from the University of Georgia. This newsletter brings you the latest information on diabetes self-management, healthy recipes and news about important diabetes-related events.

If you would like more information, please contact your local county Extension Office.

Yours truly,

County Extension Agent

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